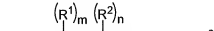
Listing of the Claims (no amendments have been made herein)

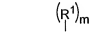
The claim listing below will replace all prior versions of the claims in the application:

1. (**Original**) A process for preparing a compound having the formula:



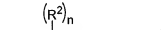
the process comprising the steps of:

combining a compound of formula (I):



(I)

with a compound of formula (II):



(II)

in a solvent in the presence of a base and a palladium catalyst, wherein

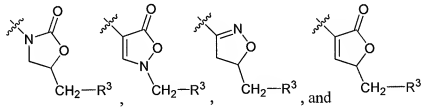
A is selected from the group consisting of:

phenyl, pyridyl, pyrazinyl, pyrimidinyl, and pyridazinyl;

B is selected from the group consisting of:

phenyl, pyridyl, pyrazinyl, pyrimidinyl, and pyridazinyl;

Het-CH_2-R^3 is selected from the group consisting of:



M-L is selected from the group consisting of:

a) M-X, b) M-L^1, c) M-L^1-X, d) M-X-L^2, e) M-L^1-X-L^2, f) M-X-L^1-X-L^2,

g) M-L^1-X-L^2-X, h) M-X-X-, i) M-L^1-X-X-, j) M-X-X-L^2, and

k) M-L^1-X-X-L^2, wherein

X, at each occurrence, independently is selected from the group consisting of:

a) -O-, b) -NR^4-, c) –N(O)-, d) –$N(OR^4)$-, e) -$S(O)_p$-, f) -SO_2NR^4-, g) -NR^4SO_2-, h) -NR^4-N=, i) =N-NR^4-, j) -O-N=, k) =N-O-, l) -N=, m) =N-, n) -NR^4-NR^4-, o) -$NR^4C(O)O$-, p) -$OC(O)NR^4$-, q) -$NR^4C(O)NR^4$- r) -$NR^4C(NR^4)NR^4$-, and s)

;

L^1 is selected from the group consisting of:

a) C_{1-6} alkyl, b) C_{2-6} alkenyl, and c) C_{2-6} alkynyl,

wherein any of a) – c) optionally is substituted with one or more R^5 groups; and

L^2 is selected from the group consisting of:

a) C_{1-6} alkyl, b) C_{2-6} alkenyl, and c) C_{2-6} alkynyl,

wherein any of a) – c) optionally is substituted with one or more R^5 groups;

alternatively, L in M-L is a bond;

M is selected from the group consisting of:

a) C_{3-14} saturated, unsaturated, or aromatic carbocycle, b) 3-14 membered saturated, unsaturated, or aromatic heterocycle containing one or more heteroatoms selected from the group consisting of nitrogen, oxygen, and sulfur, c) C_{1-6} alkyl, d) C_{2-6} alkenyl, e) C_{2-6} alkynyl, and f) –CN,

wherein any of a) – e) optionally is substituted with one or more R^5 groups;

Q is a borane having the formula $–BY_2$, wherein

Y, at each occurrence, independently is selected from the group consisting of:

a) –OH, b) -OC_{1-6} alkyl, c) -OC_{2-6} alkenyl, d) -OC_{2-6} alkynyl,

e) -OC_{1-14} saturated, unsaturated, or aromatic carbocycle, f) C_{1-6} alkyl, g) C_{2-}

$_6$ alkenyl, h) C_{2-6} alkynyl, and i) C_{1-14} saturated, unsaturated, or aromatic carbocycle,

wherein any of b) – i) optionally is substituted with one or more halogens;

alternatively, two Y groups taken together comprise a chemical moiety selected from the group consisting of:

a) -OC(R^4)(R^4)C(R^4)(R^4)O-, and b) -OC(R^4)(R^4)CH_2C(R^4)(R^4)O-;

alternatively, Q is a BF_3 alkali metal salt or 9-borabicyclo[3.3.1]nonane;

Z is selected from the group consisting of:

a) I, b) Br, c) Cl, and d) R^9OSO_3-;

R^1, at each occurrence, independently is selected from the group consisting of:

a) F, b) Cl, c) Br, d) I, e) $-CF_3$, f) $-OR^4$, g) -CN, h) $-NO_2$, i) $-NR^4R^4$, j) $-C(O)R^4$, k) $-C(O)OR^4$, l) $-OC(O)R^4$, m) $-C(O)NR^4R^4$, n) $-NR^4C(O)R^4$, o) $-OC(O)NR^4R^4$, p) $-NR^4C(O)OR^4$, q) $-NR^4C(O)NR^4R^4$, r) $-C(S)R^4$, s) $-C(S)OR^4$, t) $-OC(S)R^4$, u) $-C(S)NR^4R^4$, v) $-NR^4C(S)R^4$, w) $-OC(S)NR^4R^4$, x) $-NR^4C(S)OR^4$, y) $-NR^4C(S)NR^4R^4$, z) $-C(NR^4)R^4$, aa) $-C(NR^4)OR^4$, bb) $-OC(NR^4)R^4$, cc) $-C(NR^4)NR^4R^4$, dd) $-NR^4C(NR^4)R^4$, ee) $-OC(NR^4)NR^4R^4$, ff) $-NR^4C(NR^4)OR^4$, gg) $-NR^4C(NR^4)NR^4R^4$, hh) $-S(O)_pR^4$, ii) $-SO_2NR^4R^4$, and jj) R^4;

R^2, at each occurrence, independently is selected from the group consisting of:

a) F, b) Cl, c) Br, d) I, e) $-CF_3$, f) $-OR^4$, g) -CN, h) $-NO_2$, i) $-NR^4R^4$, j) $-C(O)R^4$, k) $-C(O)OR^4$, l) $-OC(O)R^4$, m) $-C(O)NR^4R^4$, n) $-NR^4C(O)R^4$, o) $-OC(O)NR^4R^4$, p) $-NR^4C(O)OR^4$, q) $-NR^4C(O)NR^4R^4$, r) $-C(S)R^4$, s) $-C(S)OR^4$, t) $-OC(S)R^4$, u) $-C(S)NR^4R^4$, v) $-NR^4C(S)R^4$, w) $-OC(S)NR^4R^4$, x) $-NR^4C(S)OR^4$, y) $-NR^4C(S)NR^4R^4$, z) $-C(NR^4)R^4$, aa) $-C(NR^4)OR^4$, bb) $-OC(NR^4)R^4$, cc) $-C(NR^4)NR^4R^4$, dd) $-NR^4C(NR^4)R^4$, ee) $-OC(NR^4)NR^4R^4$, ff) $-NR^4C(NR^4)OR^4$, gg) $-NR^4C(NR^4)NR^4R^4$, hh) $-S(O)_pR^4$, ii) $-SO_2NR^4R^4$, and jj) R^4;

R^3 is selected from the group consisting of:

a) $-OR^4$, b) $-NR^4R^4$, c) $-C(O)R^4$, d) $-C(O)OR^4$, e) $-OC(O)R^4$, f) $-C(O)NR^4R^4$,
g) $-NR^4C(O)R^4$, h) $-OC(O)NR^4R^4$, i) $-NR^4C(O)OR^4$, j) $-NR^4C(O)NR^4R^4$,
k) $-C(S)R^4$, l) $-C(S)OR^4$, m) $-OC(S)R^4$, n) $-C(S)NR^4R^4$, o) $-NR^4C(S)R^4$,
p) $-OC(S)NR^4R^4$, q) $-NR^4C(S)OR^4$, r) $-NR^4C(S)NR^4R^4$, s) $-C(NR^4)R^4$,
t) $-C(NR^4)OR^4$, u) $-OC(NR^4)R^4$, v) $-C(NR^4)NR^4R^4$, w) $-NR^4C(NR^4)R^4$,
x) $-OC(NR^4)NR^4R^4$, y) $-NR^4C(NR^4)OR^4$, z) $-NR^4C(NR^4)NR^4R^4$, aa) $-S(O)_pR^4$,
bb) $-SO_2NR^4R^4$, and cc) R^4;

R^4, at each occurrence, independently is selected from the group consisting of:

a) H, b) $-OR^6$, c) an amine protecting group, d) $C_{1\text{-}6}$ alkyl, e) $C_{2\text{-}6}$ alkenyl,
f) $C_{2\text{-}6}$ alkynyl, g) $C_{3\text{-}14}$ saturated, unsaturated, or aromatic carbocycle,
h) 3-14 membered saturated, unsaturated, or aromatic heterocycle comprising one or more heteroatoms selected from the group consisting of nitrogen, oxygen, and sulfur, i) $-C(O)-C_{1\text{-}6}$ alkyl, j) $-C(O)-C_{2\text{-}6}$ alkenyl, k) $-C(O)-C_{2\text{-}6}$ alkynyl,
l) $-C(O)-C_{3\text{-}14}$ saturated, unsaturated, or aromatic carbocycle,
m) -C(O)-3-14 membered saturated, unsaturated, or aromatic heterocycle comprising one or more heteroatoms selected from the group consisting of nitrogen, oxygen, and sulfur, n) $-C(O)O-C_{1\text{-}6}$ alkyl, o) $-C(O)O-C_{2\text{-}6}$ alkenyl, p) $-C(O)O-C_{2\text{-}6}$ alkynyl, q) $-C(O)O-C_{3\text{-}14}$ saturated, unsaturated, or aromatic carbocycle, and
r) -C(O)O-3-14 membered saturated, unsaturated, or aromatic heterocycle comprising one or more heteroatoms selected from the group consisting of nitrogen, oxygen, and sulfur,

wherein any of d) – r) optionally is substituted with one or more R^5 groups;

R^5, at each occurrence, is independently selected from the group consisting of:

a) F, b) Cl, c) Br, d) I, e) =O, f) =S, g) $=NR^6$, h) $=NOR^6$, i) $=N-NR^6R^6$, j) $-CF_3$, k) $-OR^6$, l) -CN, m) $-NO_2$, n) $-NR^6R^6$, o) $-C(O)R^6$, p) $-C(O)OR^6$, q) $-OC(O)R^6$,
r) $-C(O)NR^6R^6$, s) $-NR^6C(O)R^6$, t) $-OC(O)NR^6R^6$, u) $-NR^6C(O)OR^6$,
v) $-NR^6C(O)NR^6R^6$, w) $-C(S)R^6$, x) $-C(S)OR^6$, y) $-OC(S)R^6$, z) $-C(S)NR^6R^6$,
aa) $-NR^6C(S)R^6$, bb) $-OC(S)NR^6R^6$, cc) $-NR^6C(S)OR^6$, dd) $-NR^6C(S)NR^6R^6$,
ee) $-C(NR^6)R^6$, ff) $-C(NR^6)OR^6$, gg) $-OC(NR^6)R^6$, hh) $-C(NR^6)NR^6R^6$,

ii) $-NR^6C(NR^6)R^6$, jj) $-OC(NR^6)NR^6R^6$, kk) $-NR^6C(NR^6)OR^6$,

ll) $-NR^6C(NR^6)NR^6R^6$, mm) $-S(O)_pR^6$, nn) $-SO_2NR^6R^6$, and oo) R^6;

R^6, at each occurrence, independently is selected from the group consisting of:

a) H, b) $-OR^8$, c) an amine protecting group, d) C_{1-6} alkyl, e) C_{2-6} alkenyl,

f) C_{2-6} alkynyl, g) C_{3-14} saturated, unsaturated, or aromatic carbocycle,

h) 3-14 membered saturated, unsaturated, or aromatic heterocycle comprising one or more heteroatoms selected from the group consisting of nitrogen, oxygen, and sulfur, i) $-C(O)-C_{1-6}$ alkyl, j) $-C(O)-C_{2-6}$ alkenyl, k) $-C(O)-C_{2-6}$ alkynyl,

l) $-C(O)-C_{3-14}$ saturated, unsaturated, or aromatic carbocycle,

m) -C(O)-3-14 membered saturated, unsaturated, or aromatic heterocycle comprising one or more heteroatoms selected from the group consisting of nitrogen, oxygen, and sulfur, n) $-C(O)O-C_{1-6}$ alkyl, o) $-C(O)O-C_{2-6}$ alkenyl, p) $-C(O)O-C_{2-6}$ alkynyl, q) $-C(O)O-C_{3-14}$ saturated, unsaturated, or aromatic carbocycle, and

r) -C(O)O-3-14 membered saturated, unsaturated, or aromatic heterocycle comprising one or more heteroatoms selected from the group consisting of nitrogen, oxygen, and sulfur,

wherein any of d) – r) optionally is substituted with one or more R^7 groups;

R^7, at each occurrence, independently is selected from the group consisting of:

a) F, b) Cl, c) Br, d) I, e) =O, f) =S, g) $=NR^8$, h) $=NOR^8$, i) $=N-NR^8R^8$, j) $-CF_3$, k) $-OR^8$, l) -CN, m) $-NO_2$, n) $-NR^8R^8$, o) $-C(O)R^8$, p) $-C(O)OR^8$, q) $-OC(O)R^8$,

r) $-C(O)NR^8R^8$, s) $-NR^8C(O)R^8$, t) $-OC(O)NR^8R^8$, u) $-NR^8C(O)OR^8$,

v) $-NR^8C(O)NR^8R^8$, w) $-C(S)R^8$, x) $-C(S)OR^8$, y) $-OC(S)R^8$, z) $-C(S)NR^8R^8$,

aa) $-NR^8C(S)R^8$, bb) $-OC(S)NR^8R^8$, cc) $-NR^8C(S)OR^8$, dd) $-NR^8C(S)NR^8R^8$,

ee) $-C(NR^8)R^8$, ff) $-C(NR^8)OR^8$, gg) $-OC(NR^8)R^8$, hh) $-C(NR^8)NR^8R^8$,

ii) $-NR^8C(NR^8)R^8$, jj) $-OC(NR^8)NR^8R^8$, kk) $-NR^8C(NR^8)OR^8$,

ll) $-NR^8C(NR^8)NR^8R^8$, mm) $-S(O)_pR^8$, nn) $-SO_2NR^8R^8$, oo) C_{1-6} alkyl,

pp) C_{2-6} alkenyl, qq) C_{2-6} alkynyl, rr) C_{3-14} saturated, unsaturated, or aromatic carbocycle, and ss) 3-14 membered saturated, unsaturated, or aromatic heterocycle

comprising one or more heteroatoms selected from the group consisting of nitrogen, oxygen, and sulfur,

wherein any of oo) – ss) optionally is substituted with one or more moieties selected from the group consisting of R^8, F, Cl, Br, I, $-CF_3$, $-OR^8$, $-SR^8$, -CN, $-NO_2$, $-NR^8R^8$, $-C(O)R^8$, $-C(O)OR^8$, $-OC(O)R^8$, $-C(O)NR^8R^8$, $-NR^8C(O)R^8$, $-OC(O)NR^8R^8$, $-NR^8C(O)OR^8$, $-NR^8C(O)NR^8R^8$, $-C(S)R^8$, $-C(S)OR^8$, $-OC(S)R^8$, $-C(S)NR^8R^8$, $-NR^8C(S)R^8$, $-OC(S)NR^8R^8$, $-NR^8C(S)OR^8$, $-NR^8C(S)NR^8R^8$, $-C(NR^8)R^8$, $-C(NR^8)OR^8$, $-OC(NR^8)R^8$, $-C(NR^8)NR^8R^8$, $-NR^8C(NR^8)R^8$, $-OC(NR^8)NR^8R^8$, $-NR^8C(NR^8)OR^8$, $-NR^8C(NR^8)NR^8R^8$, $-SO_2NR^8R^8$, and $-S(O)_pR^8$;

R^8, at each occurrence, independently is selected from the group consisting of:

a) H, b) an amine protecting group, c) $C_{1\text{-}6}$ alkyl, d) $C_{2\text{-}6}$ alkenyl, e) $C_{2\text{-}6}$ alkynyl, f) $C_{3\text{-}14}$ saturated, unsaturated, or aromatic carbocycle, g) 3-14 membered saturated, unsaturated, or aromatic heterocycle comprising one or more heteroatoms selected from the group consisting of nitrogen, oxygen, and sulfur, h) $-C(O)-C_{1\text{-}6}$ alkyl, i) $-C(O)-C_{2\text{-}6}$ alkenyl, j) $-C(O)-C_{2\text{-}6}$ alkynyl, k) $-C(O)-C_{3\text{-}14}$ saturated, unsaturated, or aromatic carbocycle, l) -C(O)-3-14 membered saturated, unsaturated, or aromatic heterocycle comprising one or more heteroatoms selected from the group consisting of nitrogen, oxygen, and sulfur, m) $-C(O)O-C_{1\text{-}6}$ alkyl, n) $-C(O)O-C_{2\text{-}6}$ alkenyl, o) $-C(O)O-C_{2\text{-}6}$ alkynyl, p) $-C(O)O-C_{3\text{-}14}$ saturated, unsaturated, or aromatic carbocycle, and q) -C(O)O-3-14 membered saturated, unsaturated, or aromatic heterocycle comprising one or more heteroatoms selected from the group consisting of nitrogen, oxygen, and sulfur,

wherein any of c) – q) optionally is substituted with one or more moieties selected from the group consisting of F, Cl, Br, I, $-CF_3$, -OH, $-OC_{1\text{-}6}$ alkyl, -SH, $-SC_{1\text{-}6}$ alkyl, -CN, $-NO_2$, $-NH_2$, $-NHC_{1\text{-}6}$ alkyl, $-N(C_{1\text{-}6}\text{ alkyl})_2$, $-C(O)C_{1\text{-}6}$ alkyl, $-C(O)OC_{1\text{-}6}$ alkyl, $-C(O)NH_2$, $-C(O)NHC_{1\text{-}6}$ alkyl, $-C(O)N(C_{1\text{-}6}\text{ alkyl})_2$, $-NHC(O)C_{1\text{-}6}$ alkyl, $-SO_2NH_2$-, $-SO_2NHC_{1\text{-}6}$ alkyl, $-SO_2N(C_{1\text{-}6}\text{ alkyl})_2$, and $-S(O)_pC_{1\text{-}6}$ alkyl;

R^9 is selected from the group consisting of:

a) $C_{1\text{-}6}$ alkyl, b) phenyl, and c) toluyl;

wherein any of a) - c) optionally is substituted with one or more moieties selected from the group consisting of F, Cl, Br, and I;

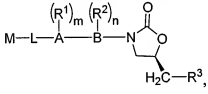
m is 0, 1, 2, 3, or 4;

n is 0, 1, 2, 3, or 4; and

p, at each occurrence, independently is 0, 1, or 2.

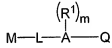
2. **(Cancelled).**

3. **(Previously Presented)** A process for preparing a compound having the formula:



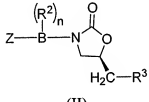
the process comprising the steps of:

combining a compound of formula (I):



(I)

with a compound of formula (II):



(II)

in a solvent in the presence of a base and a palladium catalyst,

wherein

A is selected from the group consisting of:

phenyl, pyridyl, pyrazinyl, pyrimidinyl, and pyridazinyl;

B is selected from the group consisting of:

phenyl, pyridyl, pyrazinyl, pyrimidinyl, and pyridazinyl;

M-L is selected from the group consisting of:

a) M-X, b) M-L^1, c) M-L^1-X, d) M-X-L^2, e) M-L^1-X-L^2, f) M-X-L^1-X-L^2,

g) M-L^1-X-L^2-X, h) M-X-X-, i) M-L^1-X-X-, j) M-X-X-L^2, and

k) M-L^1-X-X-L^2, wherein

X, at each occurrence, independently is selected from the group consisting of:

a) -O-, b) -NR^4-, c) –N(O)-, d) –N(OR^4)-, e) -$S(O)_p$-, f) -SO_2NR^4-,

g) -NR^4SO_2-, h) -NR^4-N=, i) =N-NR^4-, j) -O-N=, k) =N-O-,

l) -N=, m) =N-, n) -NR^4-NR^4-, o) -NR^4C(O)O-, p) -OC(O)NR^4-,

q) -NR^4C(O)NR^4- r) -NR^4C(NR^4)NR^4-, and

s)

;

L^1 is selected from the group consisting of:

a) C_{1-6} alkyl, b) C_{2-6} alkenyl, and c) C_{2-6} alkynyl,

wherein any of a) – c) optionally is substituted with one or more R^5 groups; and

L^2 is selected from the group consisting of:

a) C_{1-6} alkyl, b) C_{2-6} alkenyl, and c) C_{2-6} alkynyl,

wherein any of a) – c) optionally is substituted with one or more R^5 groups;

alternatively, L in M-L is a bond;

M is selected from the group consisting of:

a) C_{3-14} saturated, unsaturated, or aromatic carbocycle, b) 3-14 membered saturated, unsaturated, or aromatic heterocycle containing one or more heteroatoms selected from the group consisting of nitrogen, oxygen, and sulfur, c) C_{1-6} alkyl, d) C_{2-6} alkenyl, e) C_{2-6} alkynyl, and f) –CN,

wherein any of a) – e) optionally is substituted with one or more R^5 groups;

Q is a borane having the formula $–BY_2$, wherein

Y, at each occurrence, independently is selected from the group consisting of:

a) –OH, b) $-OC_{1-6}$ alkyl, c) $–OC_{2-6}$ alkenyl, d) $–OC_{2-6}$ alkynyl, e) $-OC_{1-14}$ saturated, unsaturated, or aromatic carbocycle, f) C_{1-6} alkyl, g) C_{2-6} alkenyl, h) C_{2-6} alkynyl, and i) C_{1-14} saturated, unsaturated, or aromatic carbocycle,

wherein any of b) – i) optionally is substituted with one or more halogens;

alternatively, two Y groups taken together comprise a chemical moiety selected from the group consisting of:

a) $-OC(R^4)(R^4)C(R^4)(R^4)O-$, and b) $-OC(R^4)(R^4)CH_2C(R^4)(R^4)O-$;

alternatively, Q is a BF_3 alkali metal salt or 9-borabicyclo[3.3.1]nonane;

Z is selected from the group consisting of:

a) I, b) Br, c) Cl, and d) R^9OSO_3-;

R^1, at each occurrence, independently is selected from the group consisting of:

a) F, b) Cl, c) Br, d) I, e) $-CF_3$, f) $–OR^4$, g) -CN, h) $-NO_2$, i) $-NR^4R^4$, j) $-C(O)R^4$, k) $-C(O)OR^4$, l) $-OC(O)R^4$, m) $-C(O)NR^4R^4$, n) $-NR^4C(O)R^4$, o) $-OC(O)NR^4R^4$, p) $–NR^4C(O)OR^4$, q) $–NR^4C(O)NR^4R^4$, r) $-C(S)R^4$, s) $-C(S)OR^4$, t) $-OC(S)R^4$, u) $-C(S)NR^4R^4$, v) $–NR^4C(S)R^4$, w) $-OC(S)NR^4R^4$, x) $–NR^4C(S)OR^4$, y) $-NR^4C(S)NR^4R^4$, z) $-C(NR^4)R^4$, aa) $-C(NR^4)OR^4$, bb) $-OC(NR^4)R^4$, cc) $-C(NR^4)NR^4R^4$, dd) $–NR^4C(NR^4)R^4$, ee) $-OC(NR^4)NR^4R^4$, ff) $-NR^4C(NR^4)OR^4$, gg) $-NR^4C(NR^4)NR^4R^4$, hh) $-S(O)_pR^4$, ii) $-SO_2NR^4R^4$, and jj) R^4;

R^2, at each occurrence, independently is selected from the group consisting of:

a) F, b) Cl, c) Br, d) I, e) $-CF_3$, f) $–OR^4$, g) -CN, h) $-NO_2$, i) $-NR^4R^4$, j) $-C(O)R^4$, k) $-C(O)OR^4$, l) $-OC(O)R^4$, m) $-C(O)NR^4R^4$, n) $-NR^4C(O)R^4$, o) $-OC(O)NR^4R^4$, p) $–NR^4C(O)OR^4$, q) $–NR^4C(O)NR^4R^4$, r) $-C(S)R^4$, s) $-C(S)OR^4$, t) $-OC(S)R^4$,

u) -C(S)NR^{4}R^4, v) –NR^{4}C(S)R^4, w) -OC(S)NR^{4}R^4, x) –NR^{4}C(S)OR^4,
y) -NR^{4}C(S)NR^{4}R^4, z) -C(NR^4)R^4, aa) -C(NR^4)OR^4, bb) -OC(NR^4)R^4,
cc) -C(NR^4)NR^{4}R^4, dd) –NR^{4}C(NR^4)R^4, ee) -OC(NR^4)NR^{4}R^4,
ff) -NR^{4}C(NR^4)OR^4, gg) -NR^{4}C(NR^4)NR^{4}R^4, hh) -S(O)$_p$R^4, ii) -SO$_2$NR^{4}R^4, and
jj) R^4;

R^3 is selected from the group consisting of:

a) –OR^4, b) –NR^{4}R^4, c) -C(O)R^4, d) -C(O)OR^4, e) -OC(O)R^4, f) -C(O)NR^{4}R^4,
g) -NR^{4}C(O)R^4, h) -OC(O)NR^{4}R^4, i) –NR^{4}C(O)OR^4, j) -NR^{4}C(O)NR^{4}R^4,
k) -C(S)R^4, l) -C(S)OR^4, m) -OC(S)R^4, n) -C(S)NR^{4}R^4, o) –NR^{4}C(S)R^4,
p) -OC(S)NR^{4}R^4, q) –NR^{4}C(S)OR^4, r) –NR^{4}C(S)NR^{4}R^4, s) -C(NR^4)R^4,
t) -C(NR^4)OR^4, u) -OC(NR^4)R^4, v) -C(NR^4)NR^{4}R^4, w) –NR^{4}C(NR^4)R^4,
x) -OC(NR^4)NR^{4}R^4, y) -NR^{4}C(NR^4)OR^4, z) –NR^{4}C(NR^4)NR^{4}R^4, aa) -S(O)$_p$R^4,
bb) -SO$_2$NR^{4}R^4, and cc) R^4;

R^4, at each occurrence, independently is selected from the group consisting of:

a) H, b) –OR^6, c) an amine protecting group, d) C$_{1\text{-}6}$ alkyl, e) C$_{2\text{-}6}$ alkenyl,
f) C$_{2\text{-}6}$ alkynyl, g) C$_{3\text{-}14}$ saturated, unsaturated, or aromatic carbocycle,
h) 3-14 membered saturated, unsaturated, or aromatic heterocycle comprising one or more heteroatoms selected from the group consisting of nitrogen, oxygen, and sulfur, i) -C(O)-C$_{1\text{-}6}$ alkyl, j) -C(O)-C$_{2\text{-}6}$ alkenyl, k) –C(O)-C$_{2\text{-}6}$ alkynyl,
l) -C(O)-C$_{3\text{-}14}$ saturated, unsaturated, or aromatic carbocycle,
m) -C(O)-3-14 membered saturated, unsaturated, or aromatic heterocycle comprising one or more heteroatoms selected from the group consisting of nitrogen, oxygen, and sulfur, n) -C(O)O-C$_{1\text{-}6}$ alkyl, o) -C(O)O-C$_{2\text{-}6}$ alkenyl, p) -C(O)O-C$_{2\text{-}6}$ alkynyl, q) -C(O)O-C$_{3\text{-}14}$ saturated, unsaturated, or aromatic carbocycle, and
r) -C(O)O-3-14 membered saturated, unsaturated, or aromatic heterocycle comprising one or more heteroatoms selected from the group consisting of nitrogen, oxygen, and sulfur,

wherein any of d) – r) optionally is substituted with one or more R^5 groups;

R^5, at each occurrence, is independently selected from the group consisting of:

a) F, b) Cl, c) Br, d) I, e) =O, f) =S, g) =NR^6, h) =NOR^6, i) =N-NR^6R^6, j) -CF_3, k) –OR^6, l) -CN, m) -NO_2, n) –NR^6R^6, o) -C(O)R^6, p) -C(O)OR^6, q) -OC(O)R^6, r) -C(O)NR^6R^6, s) –$NR^6C(O)R^6$, t) -OC(O)NR^6R^6, u) -$NR^6C(O)OR^6$, v) -$NR^6C(O)NR^6R^6$, w) -C(S)R^6, x) -C(S)OR^6, y) -OC(S)R^6, z) -C(S)NR^6R^6, aa) -$NR^6C(S)R^6$, bb) -OC(S)NR^6R^6, cc) -$NR^6C(S)OR^6$, dd) –$NR^6C(S)NR^6R^6$, ee) -C(NR^6)R^6, ff) -C(NR^6)OR^6, gg) -OC(NR^6)R^6, hh) -C(NR^6)NR^6R^6, ii) -$NR^6C(NR^6)R^6$, jj) -OC(NR^6)NR^6R^6, kk) –$NR^6C(NR^6)OR^6$, ll) -$NR^6C(NR^6)NR^6R^6$, mm) -S(O)$_p$$R^6$, nn) -$SO_2NR^6R^6$, and oo) R^6;

R^6, at each occurrence, independently is selected from the group consisting of:

a) H, b) –OR^8, c) an amine protecting group, d) $C_{1\text{-}6}$ alkyl, e) $C_{2\text{-}6}$ alkenyl, f) $C_{2\text{-}6}$ alkynyl, g) $C_{3\text{-}14}$ saturated, unsaturated, or aromatic carbocycle, h) 3-14 membered saturated, unsaturated, or aromatic heterocycle comprising one or more heteroatoms selected from the group consisting of nitrogen, oxygen, and sulfur, i) -C(O)-$C_{1\text{-}6}$ alkyl, j) -C(O)-$C_{2\text{-}6}$ alkenyl, k) –C(O)-$C_{2\text{-}6}$ alkynyl, l) -C(O)-$C_{3\text{-}14}$ saturated, unsaturated, or aromatic carbocycle, m) -C(O)-3-14 membered saturated, unsaturated, or aromatic heterocycle comprising one or more heteroatoms selected from the group consisting of nitrogen, oxygen, and sulfur, n) -C(O)O-$C_{1\text{-}6}$ alkyl, o) -C(O)O-$C_{2\text{-}6}$ alkenyl, p) -C(O)O-$C_{2\text{-}6}$ alkynyl, q) -C(O)O-$C_{3\text{-}14}$ saturated, unsaturated, or aromatic carbocycle, and r) -C(O)O-3-14 membered saturated, unsaturated, or aromatic heterocycle comprising one or more heteroatoms selected from the group consisting of nitrogen, oxygen, and sulfur,

wherein any of d) – r) optionally is substituted with one or more R^7 groups;

R^7, at each occurrence, independently is selected from the group consisting of:

a) F, b) Cl, c) Br, d) I, e) =O, f) =S, g) =NR^8, h) =NOR^8, i) =N-NR^8R^8, j) -CF_3, k) –OR^8, l) -CN, m) -NO_2, n) –NR^8R^8, o) -C(O)R^8, p) -C(O)OR^8, q) -OC(O)R^8, r) -C(O)NR^8R^8, s) –$NR^8C(O)R^8$, t) -OC(O)NR^8R^8, u) -$NR^8C(O)OR^8$, v) -$NR^8C(O)NR^8R^8$, w) -C(S)R^8, x) -C(S)OR^8, y) -OC(S)R^8, z) -C(S)NR^8R^8, aa) -$NR^8C(S)R^8$, bb) -OC(S)NR^8R^8, cc) -$NR^8C(S)OR^8$, dd) –$NR^8C(S)NR^8R^8$,

ee) -C(NR^8)R^8, ff) -C(NR^8)OR^8, gg) -OC(NR^8)R^8, hh) -C(NR^8)NR^{8}R^8, ii) -NR^{8}C(NR^8)R^8, jj) -OC(NR^8)NR^{8}R^8, kk) –NR^{8}C(NR^8)OR^8, ll) -NR^{8}C(NR^8)NR^{8}R^8, mm) -S(O)$_p$R^8, nn) -SO$_2$NR^{8}R^8, oo) C$_{1\text{-}6}$ alkyl, pp) C$_{2\text{-}6}$ alkenyl, qq) C$_{2\text{-}6}$ alkynyl, rr) C$_{3\text{-}14}$ saturated, unsaturated, or aromatic carbocycle, and ss) 3-14 membered saturated, unsaturated, or aromatic heterocycle comprising one or more heteroatoms selected from the group consisting of nitrogen, oxygen, and sulfur,

wherein any of oo) – ss) optionally is substituted with one or more moieties selected from the group consisting of R^8, F, Cl, Br, I, -CF$_3$, –OR^8, –SR^8, -CN, -NO$_2$, –NR^{8}R^8, -C(O)R^8, -C(O)OR^8, -OC(O)R^8, -C(O)NR^{8}R^8, -NR^{8}C(O)R^8, -OC(O)NR^{8}R^8, –NR^{8}C(O)OR^8, -NR^{8}C(O)NR^{8}R^8, -C(S)R^8, -C(S)OR^8, -OC(S)R^8, -C(S)NR^{8}R^8, -NR^{8}C(S)R^8, -OC(S)NR^{8}R^8, -NR^{8}C(S)OR^8, –NR^{8}C(S)NR^{8}R^8, -C(NR^8)R^8, -C(NR^8)OR^8, -OC(NR^8)R^8, -C(NR^8)NR^{8}R^8, -NR^{8}C(NR^8)R^8, -OC(NR^8)NR^{8}R^8, –NR^{8}C(NR^8)OR^8, -NR^{8}C(NR^8)NR^{8}R^8, -SO$_2$NR^{8}R^8, and-S(O)$_p$R^8;

R^8, at each occurrence, independently is selected from the group consisting of:

a) H, b) an amine protecting group, c) C$_{1\text{-}6}$ alkyl, d) C$_{2\text{-}6}$ alkenyl, e) C$_{2\text{-}6}$ alkynyl, f) C$_{3\text{-}14}$ saturated, unsaturated, or aromatic carbocycle, g) 3-14 membered saturated, unsaturated, or aromatic heterocycle comprising one or more heteroatoms selected from the group consisting of nitrogen, oxygen, and sulfur, h) -C(O)-C$_{1\text{-}6}$ alkyl, i) -C(O)-C$_{2\text{-}6}$ alkenyl, j) –C(O)-C$_{2\text{-}6}$ alkynyl, k) -C(O)-C$_{3\text{-}14}$ saturated, unsaturated, or aromatic carbocycle, l) -C(O)-3-14 membered saturated, unsaturated, or aromatic heterocycle comprising one or more heteroatoms selected from the group consisting of nitrogen, oxygen, and sulfur, m) -C(O)O-C$_{1\text{-}6}$ alkyl, n) -C(O)O-C$_{2\text{-}6}$ alkenyl, o) -C(O)O-C$_{2\text{-}6}$ alkynyl, p) -C(O)O-C$_{3\text{-}14}$ saturated, unsaturated, or aromatic carbocycle, and q) -C(O)O-3-14 membered saturated, unsaturated, or aromatic heterocycle comprising one or more heteroatoms selected from the group consisting of nitrogen, oxygen, and sulfur,

wherein any of c) – q) optionally is substituted with one or more moieties selected from the group consisting of F, Cl, Br, I, -CF_3, -OH, –OC_{1-6} alkyl, -SH, -SC_{1-6} alkyl, -CN, -NO_2, –NH_2, –NHC_{1-6} alkyl, -$N(C_{1-6}$ alkyl$)_2$, -$C(O)C_{1-6}$ alkyl, -$C(O)OC_{1-6}$ alkyl, -$C(O)NH_2$, –$C(O)NHC_{1-6}$ alkyl, -$C(O)N(C_{1-6}$ alkyl$)_2$, -$NHC(O)C_{1-6}$ alkyl, -SO_2NH_2-, -SO_2NHC_{1-6} alkyl, -$SO_2N(C_{1-6}$ alkyl$)_2$, and -$S(O)_pC_{1-6}$ alkyl;

R^9 is selected from the group consisting of:

a) C_{1-6} alkyl, b) phenyl, and c) toluyl;

wherein any of a) - c) optionally is substituted with one or more moieties selected from the group consisting of F, Cl, Br, and I;

m is 0, 1, 2, 3, or 4;

n is 0, 1, 2, 3, or 4; and

p, at each occurrence, independently is 0, 1, or 2.

4. (**Cancelled**).

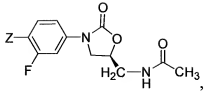
5. (**Previously Presented**) The process according to claim 1, wherein R^3 is –$NHC(O)R^4$.

6. (**Original**) The process according to claim 5, wherein R^4 is –CH_3.

7. (**Previously Presented**) The process according to claim 1, wherein R^3 is selected from the group consisting of triazole, tetrazole, oxazole, and isoxazole.

8.-11. (**Cancelled**).

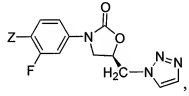
12. (**Previously Presented**) The process according to claim 1, wherein compound (II) has the formula:



(II)

wherein Z is defined as described in claim 1.

13. (**Previously Presented**) The process according to claim 1, wherein compound (II) has the formula:

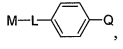


(II)

wherein Z is defined as described in claim 1.

14. -17. (**Cancelled**).

18. (**Previously Presented**) The process according to claim 1, wherein compound (I) has the formula:



(I)

wherein L, M, and Q, are defined as described in claim 1.

19.-20. (**Cancelled**).

21. (**Previously Presented**) The process according to claim 1, wherein M-L is M-CH_2-X-CH_2-.

22. (**Original**) The process according to claim 21, wherein X is $-NR^4-$.

23. (**Original**) The process according to claim 22, wherein R^4 is H.

24. (**Original**) The process according to claim 22, wherein R^4 is an amine protecting group.

25. (**Original**) The process according to claim 24, wherein the amine protecting group is selected from the group consisting of:

a) benzyl, b) *t*-butyldimethylsilyl, c) *t*-butdyldiphenylsilyl, d) *t*-butyloxycarbonyl, e) *p*-methoxybenzyl, f) methoxymethyl, g) tosyl, h) trifluoroacetyl, i) trimethylsilyl, j) fluorenyl-methyloxycarbonyl, k) 2-trimethylsilyl-ethyoxycarbonyl, l) 1-methyl-1-(4-biphenylyl)ethoxycarbonyl, m) allyloxycarbonyl, and n) benzyloxycarbonyl.

26. (**Original**) The process according to claim 24, further comprising the step of removing the amine protecting group.

27.-30. (**Cancelled**).

31. (**Previously Presented**) The process according to claim 21, wherein M comprises a 5-6 membered saturated, unsaturated, or aromatic heterocycle comprising one or more heteroatoms selected from the group consisting of nitrogen, oxygen, and sulfur.

32. (**Original**) The process according to claim 31, wherein M is selected from the group consisting of triazole, tetrazole, oxazole, and isoxazole.

33.-34. (**Cancelled**).

35. (**Original**) The process according to claim 32, wherein M is [1,2,3]triazol-4-yl.

36. (**Previously Presented**) The process according to claim 1, wherein M-L is M-X-CH_2-.

37. (**Original**) The process according to claim 36, wherein X is –NR^4-.

38. (**Original**) The process according to claim 37, wherein R^4 is H.

39. (**Original**) The process according to claim 37, wherein R^4 is an amine protecting group.

40. (**Original**) The process according to claim 39, wherein the amine protecting group is selected from the group consisting of:

a) benzyl, b) *t*-butyldimethylsilyl, c) *t*-butdyldiphenylsilyl, d) *t*-butyloxycarbonyl, e) *p*-methoxybenzyl, f) methoxymethyl, g) tosyl, h) trifluoroacetyl, i) trimethylsilyl, j) fluorenyl-methyloxycarbonyl, k) 2-trimethylsilyl-ethyoxycarbonyl, l) 1-methyl-1-(4-biphenylyl)ethoxycarbonyl, m) allyloxycarbonyl, and n) benzyloxycarbonyl.

41. (**Original**) The process according to claim 39, further comprising the step of removing the amine protecting group.

42.-43. (**Cancelled**).

44. (**Previously Presented**) The process according to claim 36, wherein M is selected from the group consisting of:

a) C_{1-6} alkyl, b) C_{2-6} alkenyl, c) C_{2-6} alkynyl, and d) –CN,

wherein

i) any of a) – c) is substituted with one or more moieties selected from the group consisting of F, Cl, Br, I, and -CN; and

ii) any of a) – c) optionally is further substituted with one or more R^5 groups.

45. (**Original**) The process according to claim 44, wherein M is C_{1-6} alkyl substituted with one or more atoms selected from the group consisting of F, Cl, Br, and I.

46. (**Original**) The process according to claim 45, wherein M is $-CH_2CH_2CH_2F$.

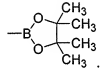
47.-50. (**Cancelled**).

51. (**Previously Presented**) The process according to claim 1, wherein Z is selected from the group consisting of I, trifluoromethanesulfonate, and *p*-toluenesulfonate.

52. (**Original**) The process according to claim 51, wherein Z is I.

53. (**Previously Presented**) The process according to claim 1, wherein Q is $-B(OH)_2$.

54. (**Previously Presented**) The process according to claim 1, wherein Q is:



55. (**Previously Presented**) The process according to claim 1, wherein Q is $-BF_2{\cdot}KF$.

56. (**Previously Presented**) The process according to claim 1, wherein the base is selected from the group consisting of alkali metal hydroxides, alkali metal carbonates, alkali metal fluorides, trialkyl amines, and mixtures thereof.

57. (**Cancelled**).

58. (**Previously Presented**) The process according to claim 56, wherein the base is potassium carbonate.

59. (**Original**) The process according to claim 56, wherein the ratio of equivalents of base to equivalents of compound (I) is about 3:1.

60. (**Previously Presented**) The process according to claim 1, wherein the palladium catalyst is a ligand coordinated palladium (0) catalyst.

61. (**Cancelled**)

62. (**Previously Presented**) The process according to claim 60, wherein the palladium catalyst is tetrakis(triphenylphosphine) palladium (0).

63. (**Original**) The process according to claim 62, wherein the ratio of the equivalents of tetrakis(triphenylphosphine) palladium (0) to the equivalents of compound (I) is about 1:20.

64. (**Previously Presented**) The process according to claim 1, wherein the solvent comprises an aqueous solvent.

65. (**Cancelled**).

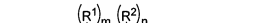
66. (**Previously Presented**) The process according to claim 64 wherein the solvent comprises a mixture of water, toluene, and ethanol.

67. (**Original**) The process according to claim 66 wherein the solvent comprises a mixture of water, toluene, and ethanol in a ratio of about 1:3:1 by volume.

68. **(Previously Presented)** The process according to claim 1, wherein the process is carried out at a temperature between about 20 °C and about 100 °C.

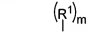
69. **(Previously Presented)** The process according to claim 1, wherein the process is carried out at the reflux temperature of the solvent.

70. **(Original)** A process for preparing a compound having the formula:



the process comprising the steps of:

combining a compound of formula (I):



(I)

with a compound of formula (II):

(II)

in a solvent in the presence of a base and a palladium catalyst, wherein

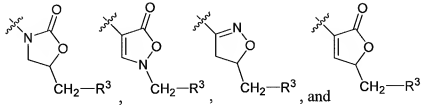
A is selected from the group consisting of:

phenyl, pyridyl, pyrazinyl, pyrimidinyl, and pyridazinyl;

B is selected from the group consisting of:

phenyl, pyridyl, pyrazinyl, pyrimidinyl, and pyridazinyl;

Het-CH_2-R^3 is selected from the group consisting of:



M-L is selected from the group consisting of:

a) M-X, b) M-L^1, c) M-L^1-X, d) M-X-L^2, e) M-L^1-X-L^2, f) M-X-L^1-X-L^2,
g) M-L^1-X-L^2-X, h) M-X-X-, i) M-L^1-X-X-, j) M-X-X-L^2, and
k) M-L^1-X-X-L^2, wherein

X, at each occurrence, independently is selected from the group consisting of:

a) -O-, b) -NR^4-, c) –N(O)-, d) –N(OR^4)-, e) -$S(O)_p$-, f) -SO_2NR^4-,
g) -NR^4SO_2-, h) -NR^4-N=, i) =N-NR^4-, j) -O-N=, k) =N-O-,
l) -N=, m) =N-, n) -NR^4-NR^4-, o) -$NR^4C(O)O$-, p) -OC(O)NR^4-,
q) -$NR^4C(O)NR^4$- r) -$NR^4C(NR^4)NR^4$-, and
s)

;

L^1 is selected from the group consisting of:

a) C_{1-6} alkyl, b) C_{2-6} alkenyl, and c) C_{2-6} alkynyl,
wherein any of a) – c) optionally is substituted with one or more R^5 groups; and

L^2 is selected from the group consisting of:

a) C_{1-6} alkyl, b) C_{2-6} alkenyl, and c) C_{2-6} alkynyl,
wherein any of a) – c) optionally is substituted with one or more R^5 groups;

alternatively, L in M-L is a bond;

M is selected from the group consisting of:

a) C_{3-14} saturated, unsaturated, or aromatic carbocycle, b) 3-14 membered saturated, unsaturated, or aromatic heterocycle containing one or more heteroatoms selected from the group consisting of nitrogen, oxygen, and sulfur, c) C_{1-6} alkyl, d) C_{2-6} alkenyl, e) C_{2-6} alkynyl, and f) –CN,
wherein any of a) – e) optionally is substituted with one or more R^5 groups;

Q is a borane having the formula –BY_2, wherein

Y, at each occurrence, independently is selected from the group consisting of:

a) –OH, b) -OC_{1-6} alkyl, c) –OC_{2-6} alkenyl, d) –OC_{2-6} alkynyl,

e) -OC_{1-14} saturated, unsaturated, or aromatic carbocycle, f) C_{1-6} alkyl,

g) C_{2-6} alkenyl, h) C_{2-6} alkynyl, and i) C_{1-14} saturated, unsaturated, or aromatic carbocycle,

wherein any of b) – i) optionally is substituted with one or more halogens;

alternatively, two Y groups taken together comprise a chemical moiety selected from the group consisting of:

a) -$OC(R^4)(R^4)C(R^4)(R^4)O$-, and b) -$OC(R^4)(R^4)CH_2C(R^4)(R^4)O$-;

alternatively, Q is a BF_3 alkali metal salt or 9-borabicyclo[3.3.1]nonane;

Z is selected from the group consisting of:

a) I, b) Br, c) Cl, and d) R^9OSO_3-;

R^1, at each occurrence, independently is selected from the group consisting of:

a) F, b) Cl, c) Br, d) I, e) -CF_3, f) –OR^4, g) -CN, h) -NO_2, i) -NR^4R^4, j) -$C(O)R^4$,

k) -$C(O)OR^4$, l) -$OC(O)R^4$, m) -$C(O)NR^4R^4$, n) -$NR^4C(O)R^4$, o) -$OC(O)NR^4R^4$,

p) –$NR^4C(O)OR^4$, q) –$NR^4C(O)NR^4R^4$, r) -$C(S)R^4$, s) -$C(S)OR^4$, t) -$OC(S)R^4$,

u) -$C(S)NR^4R^4$, v) –$NR^4C(S)R^4$, w) -$OC(S)NR^4R^4$, x) –$NR^4C(S)OR^4$,

y) -$NR^4C(S)NR^4R^4$, z) -$C(NR^4)R^4$, aa) -$C(NR^4)OR^4$, bb) -$OC(NR^4)R^4$,

cc) -$C(NR^4)NR^4R^4$, dd) –$NR^4C(NR^4)R^4$, ee) -$OC(NR^4)NR^4R^4$,

ff) -$NR^4C(NR^4)OR^4$, gg) -$NR^4C(NR^4)NR^4R^4$, hh) -$S(O)_pR^4$, ii) -$SO_2NR^4R^4$, and

jj) R^4;

R^2, at each occurrence, independently is selected from the group consisting of:

a) F, b) Cl, c) Br, d) I, e) -CF_3, f) –OR^4, g) -CN, h) -NO_2, i) -NR^4R^4, j) -$C(O)R^4$,

k) -$C(O)OR^4$, l) -$OC(O)R^4$, m) -$C(O)NR^4R^4$, n) -$NR^4C(O)R^4$, o) -$OC(O)NR^4R^4$,

p) –$NR^4C(O)OR^4$, q) –$NR^4C(O)NR^4R^4$, r) -$C(S)R^4$, s) -$C(S)OR^4$, t) -$OC(S)R^4$,

u) -$C(S)NR^4R^4$, v) –$NR^4C(S)R^4$, w) -$OC(S)NR^4R^4$, x) –$NR^4C(S)OR^4$,

y) -$NR^4C(S)NR^4R^4$, z) -$C(NR^4)R^4$, aa) -$C(NR^4)OR^4$, bb) -$OC(NR^4)R^4$,

cc) -$C(NR^4)NR^4R^4$, dd) –$NR^4C(NR^4)R^4$, ee) -$OC(NR^4)NR^4R^4$,

ff) $-NR^4C(NR^4)OR^4$, gg) $-NR^4C(NR^4)NR^4R^4$, hh) $-S(O)_pR^4$, ii) $-SO_2NR^4R^4$, and jj) R^4;

R^3 is selected from the group consisting of:

a) $-OR^4$, b) $-NR^4R^4$, c) $-C(O)R^4$, d) $-C(O)OR^4$, e) $-OC(O)R^4$, f) $-C(O)NR^4R^4$, g) $-NR^4C(O)R^4$, h) $-OC(O)NR^4R^4$, i) $-NR^4C(O)OR^4$, j) $-NR^4C(O)NR^4R^4$, k) $-C(S)R^4$, l) $-C(S)OR^4$, m) $-OC(S)R^4$, n) $-C(S)NR^4R^4$, o) $-NR^4C(S)R^4$, p) $-OC(S)NR^4R^4$, q) $-NR^4C(S)OR^4$, r) $-NR^4C(S)NR^4R^4$, s) $-C(NR^4)R^4$, t) $-C(NR^4)OR^4$, u) $-OC(NR^4)R^4$, v) $-C(NR^4)NR^4R^4$, w) $-NR^4C(NR^4)R^4$, x) $-OC(NR^4)NR^4R^4$, y) $-NR^4C(NR^4)OR^4$, z) $-NR^4C(NR^4)NR^4R^4$, aa) $-S(O)_pR^4$, bb) $-SO_2NR^4R^4$, and cc) R^4;

R^4, at each occurrence, independently is selected from the group consisting of:

a) H, b) $-OR^6$, c) an amine protecting group, d) $C_{1\text{-}6}$ alkyl, e) $C_{2\text{-}6}$ alkenyl, f) $C_{2\text{-}6}$ alkynyl, g) $C_{3\text{-}14}$ saturated, unsaturated, or aromatic carbocycle, h) 3-14 membered saturated, unsaturated, or aromatic heterocycle comprising one or more heteroatoms selected from the group consisting of nitrogen, oxygen, and sulfur, i) $-C(O)-C_{1\text{-}6}$ alkyl, j) $-C(O)-C_{2\text{-}6}$ alkenyl, k) $-C(O)-C_{2\text{-}6}$ alkynyl, l) $-C(O)-C_{3\text{-}14}$ saturated, unsaturated, or aromatic carbocycle, m) -C(O)-3-14 membered saturated, unsaturated, or aromatic heterocycle comprising one or more heteroatoms selected from the group consisting of nitrogen, oxygen, and sulfur, n) $-C(O)O-C_{1\text{-}6}$ alkyl, o) $-C(O)O-C_{2\text{-}6}$ alkenyl, p) $-C(O)O-C_{2\text{-}6}$ alkynyl, q) $-C(O)O-C_{3\text{-}14}$ saturated, unsaturated, or aromatic carbocycle, and r) -C(O)O-3-14 membered saturated, unsaturated, or aromatic heterocycle comprising one or more heteroatoms selected from the group consisting of nitrogen, oxygen, and sulfur,

wherein any of d) – r) optionally is substituted with one or more R^5 groups;

R^5, at each occurrence, is independently selected from the group consisting of:

a) F, b) Cl, c) Br, d) I, e) =O, f) =S, g) $=NR^6$, h) $=NOR^6$, i) $=N\text{-}NR^6R^6$, j) $-CF_3$, k) $-OR^6$, l) -CN, m) $-NO_2$, n) $-NR^6R^6$, o) $-C(O)R^6$, p) $-C(O)OR^6$, q) $-OC(O)R^6$,

r) -C(O)NR^{6}R^6, s) –NR^{6}C(O)R^6, t) -OC(O)NR^{6}R^6, u) -NR^{6}C(O)OR^6,
v) -NR^{6}C(O)NR^{6}R^6, w) -C(S)R^6, x) -C(S)OR^6, y) -OC(S)R^6, z) -C(S)NR^{6}R^6,
aa) -NR^{6}C(S)R^6, bb) -OC(S)NR^{6}R^6, cc) -NR^{6}C(S)OR^6, dd) –NR^{6}C(S)NR^{6}R^6,
ee) -C(NR^6)R^6, ff) -C(NR^6)OR^6, gg) -OC(NR^6)R^6, hh) -C(NR^6)NR^{6}R^6,
ii) -NR^{6}C(NR^6)R^6, jj) -OC(NR^6)NR^{6}R^6, kk) –NR^{6}C(NR^6)OR^6,
ll) -NR^{6}C(NR^6)NR^{6}R^6, mm) -S(O)$_p$R^6, nn) -SO$_2$NR^{6}R^6, and oo) R^6;

R^6, at each occurrence, independently is selected from the group consisting of:

a) H, b) –OR^8, c) an amine protecting group, d) C$_{1\text{-}6}$ alkyl, e) C$_{2\text{-}6}$ alkenyl,
f) C$_{2\text{-}6}$ alkynyl, g) C$_{3\text{-}14}$ saturated, unsaturated, or aromatic carbocycle,
h) 3-14 membered saturated, unsaturated, or aromatic heterocycle comprising one or more heteroatoms selected from the group consisting of nitrogen, oxygen, and sulfur, i) -C(O)-C$_{1\text{-}6}$ alkyl, j) -C(O)-C$_{2\text{-}6}$ alkenyl, k) –C(O)-C$_{2\text{-}6}$ alkynyl,
l) -C(O)-C$_{3\text{-}14}$ saturated, unsaturated, or aromatic carbocycle,
m) -C(O)-3-14 membered saturated, unsaturated, or aromatic heterocycle comprising one or more heteroatoms selected from the group consisting of nitrogen, oxygen, and sulfur, n) -C(O)O-C$_{1\text{-}6}$ alkyl, o) -C(O)O-C$_{2\text{-}6}$ alkenyl, p) -C(O)O-C$_{2\text{-}6}$ alkynyl, q) -C(O)O-C$_{3\text{-}14}$ saturated, unsaturated, or aromatic carbocycle, and r) -C(O)O-3-14 membered saturated, unsaturated, or aromatic heterocycle comprising one or more heteroatoms selected from the group consisting of nitrogen, oxygen, and sulfur,

wherein any of d) – r) optionally is substituted with one or more R^7 groups;

R^7, at each occurrence, independently is selected from the group consisting of:

a) F, b) Cl, c) Br, d) I, e) =O, f) =S, g) =NR^8, h) =NOR^8, i) =N-NR^{8}R^8, j) -CF$_3$,
k) –OR^8, l) -CN, m) -NO$_2$, n) –NR^{8}R^8, o) -C(O)R^8, p) -C(O)OR^8, q) -OC(O)R^8,
r) -C(O)NR^{8}R^8, s) –NR^{8}C(O)R^8, t) -OC(O)NR^{8}R^8, u) -NR^{8}C(O)OR^8,
v) -NR^{8}C(O)NR^{8}R^8, w) -C(S)R^8, x) -C(S)OR^8, y) -OC(S)R^8, z) -C(S)NR^{8}R^8,
aa) -NR^{8}C(S)R^8, bb) -OC(S)NR^{8}R^8, cc) -NR^{8}C(S)OR^8, dd) –NR^{8}C(S)NR^{8}R^8,
ee) -C(NR^8)R^8, ff) -C(NR^8)OR^8, gg) -OC(NR^8)R^8, hh) -C(NR^8)NR^{8}R^8,

ii) -$NR^8C(NR^8)R^8$, jj) -$OC(NR^8)NR^8R^8$, kk) –$NR^8C(NR^8)OR^8$,
ll) -$NR^8C(NR^8)NR^8R^8$, mm) -$S(O)_pR^8$, nn) -$SO_2NR^8R^8$, oo) C_{1-6} alkyl,
pp) C_{2-6} alkenyl, qq) C_{2-6} alkynyl, rr) C_{3-14} saturated, unsaturated, or aromatic carbocycle, and ss) 3-14 membered saturated, unsaturated, or aromatic heterocycle comprising one or more heteroatoms selected from the group consisting of nitrogen, oxygen, and sulfur,

wherein any of oo) – ss) optionally is substituted with one or more moieties selected from the group consisting of R^8, F, Cl, Br, I, -CF_3, –OR^8, –SR^8, -CN, -NO_2, –NR^8R^8, -$C(O)R^8$, -$C(O)OR^8$, -$OC(O)R^8$, -$C(O)NR^8R^8$, -$NR^8C(O)R^8$, -$OC(O)NR^8R^8$, –$NR^8C(O)OR^8$, -$NR^8C(O)NR^8R^8$, -$C(S)R^8$, -$C(S)OR^8$, -$OC(S)R^8$, -$C(S)NR^8R^8$, -$NR^8C(S)R^8$, -$OC(S)NR^8R^8$, -$NR^8C(S)OR^8$, –$NR^8C(S)NR^8R^8$, -$C(NR^8)R^8$, -$C(NR^8)OR^8$, -$OC(NR^8)R^8$, -$C(NR^8)NR^8R^8$, -$NR^8C(NR^8)R^8$, -$OC(NR^8)NR^8R^8$, –$NR^8C(NR^8)OR^8$, -$NR^8C(NR^8)NR^8R^8$, -$SO_2NR^8R^8$, and-$S(O)_pR^8$;

R^8, at each occurrence, independently is selected from the group consisting of:
a) H, b) an amine protecting group, c) C_{1-6} alkyl, d) C_{2-6} alkenyl, e) C_{2-6} alkynyl, f) C_{3-14} saturated, unsaturated, or aromatic carbocycle, g) 3-14 membered saturated, unsaturated, or aromatic heterocycle comprising one or more heteroatoms selected from the group consisting of nitrogen, oxygen, and sulfur, h) -$C(O)$-C_{1-6} alkyl, i) -$C(O)$-C_{2-6} alkenyl, j) –$C(O)$-C_{2-6} alkynyl, k) -$C(O)$-C_{3-14} saturated, unsaturated, or aromatic carbocycle, l) -$C(O)$-3-14 membered saturated, unsaturated, or aromatic heterocycle comprising one or more heteroatoms selected from the group consisting of nitrogen, oxygen, and sulfur, m) -$C(O)O$-C_{1-6} alkyl, n) -$C(O)O$-C_{2-6} alkenyl, o) -$C(O)O$-C_{2-6} alkynyl, p) -$C(O)O$-C_{3-14} saturated, unsaturated, or aromatic carbocycle, and q) -$C(O)O$-3-14 membered saturated, unsaturated, or aromatic heterocycle comprising one or more heteroatoms selected from the group consisting of nitrogen, oxygen, and sulfur,

wherein any of c) – q) optionally is substituted with one or more moieties selected from the group consisting of F, Cl, Br, I, $-CF_3$, -OH, $-OC_{1-6}$ alkyl, -SH, $-SC_{1-6}$ alkyl, -CN, $-NO_2$, $-NH_2$, $-NHC_{1-6}$ alkyl, $-N(C_{1-6}\text{ alkyl})_2$, $-C(O)C_{1-6}$ alkyl, $-C(O)OC_{1-6}$ alkyl, $-C(O)NH_2$, $-C(O)NHC_{1-6}$ alkyl, $-C(O)N(C_{1-6}\text{ alkyl})_2$, $-NHC(O)C_{1-6}$ alkyl, $-SO_2NH_2$-, $-SO_2NHC_{1-6}$ alkyl, $-SO_2N(C_{1-6}\text{ alkyl})_2$, and $-S(O)_pC_{1-6}$ alkyl;

R^9 is selected from the group consisting of:

a) C_{1-6} alkyl, b) phenyl, and c) toluyl;

wherein any of a) - c) optionally is substituted with one or more moieties selected from the group consisting of F, Cl, Br, and I;

m is 0, 1, 2, 3, or 4;

n is 0, 1, 2, 3, or 4; and

p, at each occurrence, independently is 0, 1, or 2.

71.-138. **(Cancelled).**